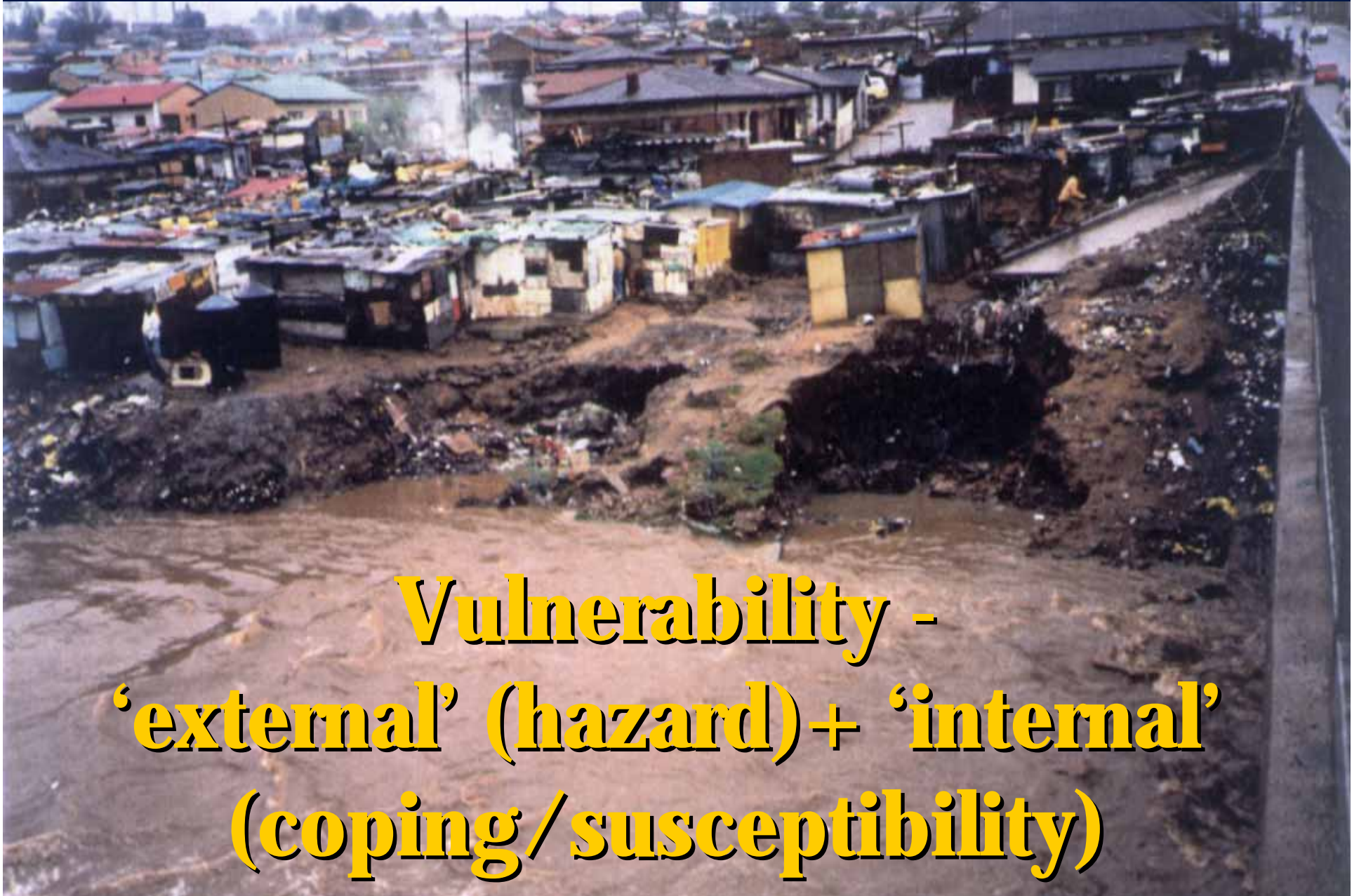


Building resilience to climate variability and change: the case of JHB

REVAMP, Wits
City of JHB

Fig 1: Electric thunderstorm over Sandton
<http://pixdaus.com/single.php?id=127213>

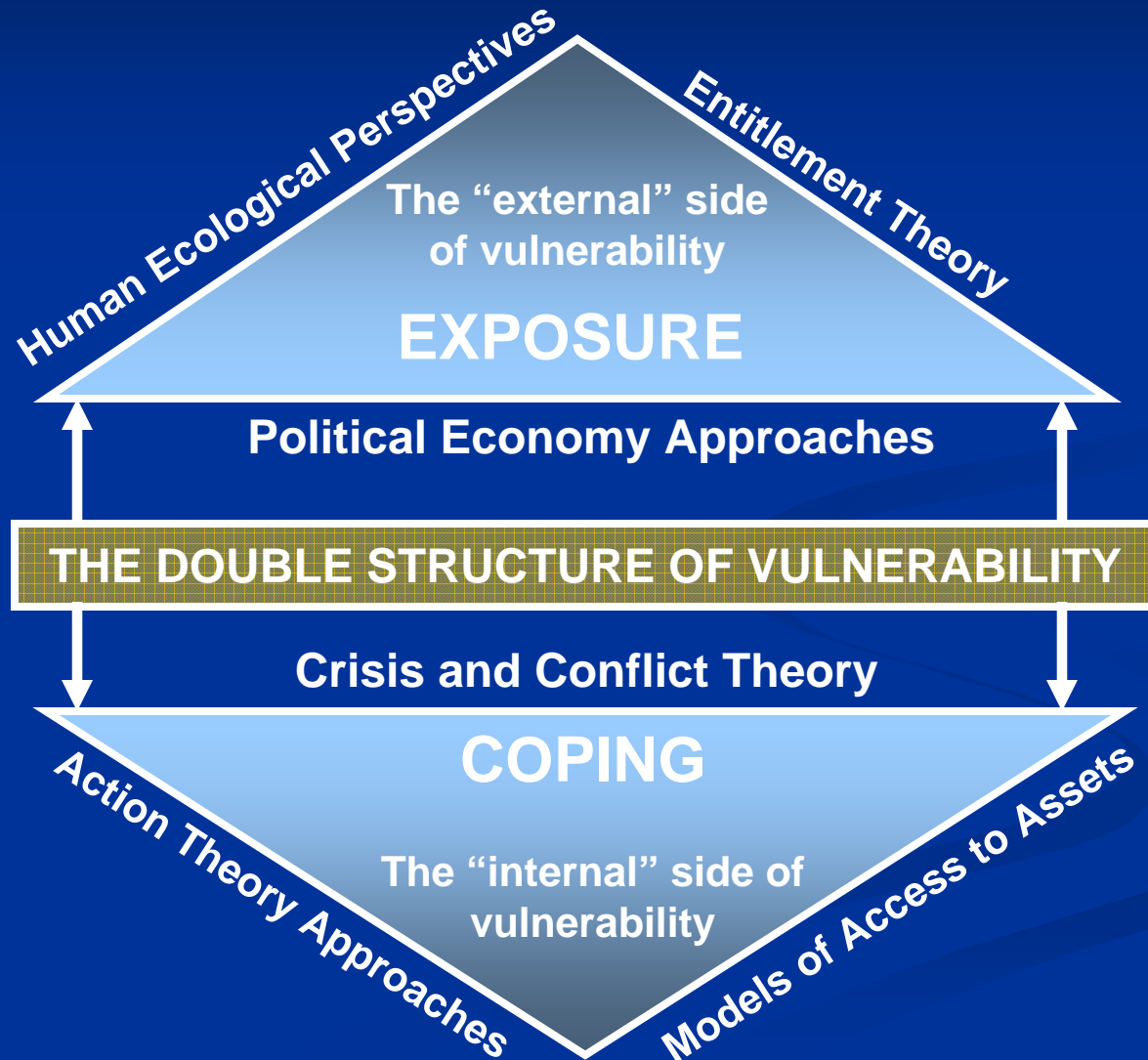




**Vulnerability -
'external' (hazard) + 'internal'
(coping/susceptibility)**

Double Structure of Vulnerability

(After Bohle, 2001)



Vulnerability + risks

- **Need to always include both dimensions ('internal' and 'external' components/dimensions)**
- **Person or a system is vulnerable TO something? This has to be clearly articulated.**
- **Often vulnerability assessments can become diffuse and loose, with little additional value.**

Vulnerability to climate change: implications for the City of Johannesburg and surrounds

- Climate change and climate variability key for Johannesburg
- Flooding in Johannesburg: estimated costs include lives lost (137 drownings in 2007 and 139 drownings in 2008) and a range of infra-structural losses (e.g. recently in Soweto).
- Adaptation plan is currently being drawn up for the City.
- Down-scaled assessments from some models will include scenarios for temperature and rainfall.
- The City thus has to adapt both to *present* climate variability and to *future* climate change

Gap Analysis

- **Few model-based projections and down-scaled assessments for eastern parts of South Africa including Johannesburg area.**
- **Few assessments of extreme events, magnitude and frequency of flood occurrence, are we dealing with CC or climate variability, or both?**
- **Limited integration of planning and climate change adaptation.**
- **Few loss inventories that could be used to persuade others to 'buy into' CCA**

Information (from data) needed

- **Need a range of model projections, ‘envelopes’ so that city planners and others can begin to make effective planning decisions.**
- **Need tools to integrate such information into existing planning platforms (e.g. IDPs, SDFs (Spatial Development Frameworks) and RSDFs (Regional Spatial Development Frameworks)– these spatial dev frameworks are real tools for development planners, it is at this level that land use decisions are made, CCA must inform assessment criteria for land use decisions.**
- **Need ‘community-based’ and ‘expert-led’ vulnerability assessments of risk areas.**

The case of Johannesburg

- Very few, if any robust assessments of climate change versus variability (storm patterns, magnitude and frequency).
- Few loss inventories of what such 'normal' events cost the city.
- Few detailed, multi-dimensional, scoped vulnerability assessments that focus on hazard (external risk) + (internal dimensions) susceptibility and adaptive capacity.
- To have traction this study must include 'users' upfront.

CC Data needed

- **Flood prone areas in the City and mapped areas of risk (Gondwana Consultants).**
- **Produce up to date and reliable floodline data for the City to inform development patterns, decision making regarding new developments and identify risk areas**
- **Assessment of rainfall to assess patterns e.g. variability, are storms more frequent, more intense? (in preparation/REVAMP).**
- **Assess and compare disaster loss inventories (costs/REVAMP and City of JHB).**
- **Engage JRA (Johannesburg Road Agency) – assess storm loss information and costs, risk prone areas.**
- **Begin small community-based assessments of risk to capture dimensions of vulnerability (REVAMP).**

Conclusion

- **We need to build and mainstream vulnerability assessments into planning activities.**
- **Therefore this project will engage the City upfront (working with key actors e.g. Linda Phalatsi and team; JRA and the community).**
- **Once this pilot has been undertaken can assess activities, re-direct future activities.**